

REMARKS

After entry of the present Amendment, Claims 1, 3-5, 8-10 and 12-19 are pending in the subject application with Claims 1 and 8 in independent form. Claim 1 is currently amended to further clarify that Component (B) comprises a non-crosslinkable silicone oil or an organic oil. Claims 6 and 7, though presently withdrawn, and also amended in view of presently amended claim 1. Support for presently amended claims 1, 6 and 7 can be found in at least paragraph [0014] of the subject application as published (specifically, U.S. Publ. Pat. Appl. No. 2006/0104929). Claims 13-19 are new and are directed toward the average particle size of the emulsion and the homogeneity of the mixture of the emulsion. Support for new claims 13-19 can be found in at least paragraph [0016] of the subject application as published. Thus, no new matter is introduced via the present Amendment. No claims are cancelled or withdrawn in the present Amendment. Claims 2 and 11 were previously cancelled, and claims 6 and 7 were previously withdrawn.

Claims 1, 3-5, 8-10 and 12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 6,013,682 to Dalle et al. (the '682 patent) in view of Lochhead, Robert Y., "Encyclopedia of Polymers and Thickeners for Cosmetics," Cosmetics and Toiletries, 108 (1993) (Lochhead et al.). Claims 1, 3-5, 8-10 and 12 also stand rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 6,143,310 to Sang et al. (the '310 patent) in view of the '682 patent.

The issue on which the Applicants and the Examiner continue to disagree is whether Comparative Examples 1-3 of the subject application correspond with Examples 1-3 of the

'682 patent, which is the primary reference upon which the Examiner's rejections are based. In particular, in her Advisory Action, the Examiner states that the emulsions prepared in the '682 patent include laureth-3 and laureth-23, which are not present in Comparative Examples 1-3 of the subject application. The Applicants respectfully submit that each of these components is merely an emulsifier/surfactant, which have no impact on the chemical structure of the organosilicon polymer itself which is prepared in these Examples. Further, the Applicants respectfully point out that, as known by those skilled in the art, laureth-3 is a synonym for dodecyl triethylene glycol ether. In addition, laureth-23 is also a polyethylene glycol ether of lauryl alcohol. Notably, the Comparative Examples of the subject application include a secondary tetradecyl ether and a secondary dodecyl ether of ethylene oxide as emulsifiers/surfactants. As such, contrary to the Examiner's position, not only are laureth-3 and laureth-23 irrelevant to the chemical structure of the organosilicon polymer itself, but the Comparative Examples of the subject application include equivalent emulsifiers/surfactants in nearly the same percentages by weight as the '628 patent. For the Examiner's convenience, Table 1 below exemplifies the fact that the composition of Example 1 of the '628 patent is merely identical with that of Comparative Example 1 of the subject application. In particular, Column II of Table 1 sets forth the parts by weight of each respective component of the composition of Example 1 of the '628 patent, with Column III setting forth the percent by weight of each respective component thereof. Column IV sets forth the parts by weight of each respective component of the composition of Comparative Example 1 of the subject application, with Column V setting forth the percent by weight of

each respective component thereof. As illustrated in Table 1, the surfactants, which the Examiner is now relying on in her opinion that the compositions of the Comparative Examples of the subject application are different from those of Examples 1-3 of the '628 patent, are present in Comparative Example 1 of the subject application in a combined amount of 7.4 percent by weight, whereas the surfactants are present in Example 1 of the '628 patent in a combined amount of 5.6 percent by weight. Thus, not only are equivalent surfactants present in the Comparative Examples of the subject application, but the surfactants are present in nearly identical quantities.

Table 1:

	Ex.1 of the '628 Patent		Comparative Ex. 1	
	Parts by weight	Weight percent	Parts by weight	Weight percent
Dimethylvinylsiloxyl terminated polydimethylsiloxane	29.000	0.916	98.000	0.906
Organohydrogenpolysiloxane	0.900	0.028	2.000	0.018
Platinum catalyst	0.015	0.000	0.015	0.000
Surfactant 1	0.750	0.024	3.400	0.031
Surfactant 2	1.000	0.032	4.700	0.043
Total:	31.665		108.115	

The Examiner also argues that the fact that the order of addition is the same in only one of the Comparative Examples of the subject application as the order of addition in the Examples of the '628 patent. However, the Applicants respectfully submit that, in regards to a hydrosilylation reaction, which is the reaction relied upon to form Component (A) of the present claims, the order of addition does not impact the chemical structure of the organosilicon polymer itself. As known throughout the art, a hydrosilylation reaction is an addition reaction between silicon-bonded hydrogen atoms of organohydrogenpolysiloxanes

and an alkenyl group, such as a vinyl group, in organopolysiloxanes, in the presence of a catalyst, typically a platinum catalyst. Thus, the hydrosilylation will not occur to form an organosilicon polymer until these three components are in the presence of one another. As such, it is irrelevant whether the organohydrogenpolysiloxane and the organopolysiloxane having the alkenyl group are mixed with the platinum catalyst before or after adding additional non-reactive components. The hydrosilylation reaction takes place when the platinum catalyst is in the presence of the organohydrogenpolysiloxane and the organopolysiloxane having the alkenyl group. As such, regardless of whether the platinum catalyst is added to the organohydrogenpolysiloxane and the organopolysiloxane having the alkenyl group before or after adding additional non-reactive components, the same chemical structure of the organosilicon polymer results. Therefore, the order of addition of the Examples of the '682 patent and the order of addition of the Comparative Examples of the subject application is irrelevant with respect to the chemical structure of the organosilicon polymer itself.

The Examiner also argues that the Examples of the '682 patent and the Comparative Examples of the subject application utilize different ratios of dimethylvinylsiloxy terminated dimethylpolysiloxane to organohydrogenpolysiloxane and, as such, the Examiner opines that the Comparative Examples of the subject application do not read on the closest cited prior art. The Applicants once again respectfully disagree with respect to the relevance and/or importance of these ratios. The Examiner contends that this ratio determines the ultimate structure of the organosilicon polymer. However, the Applicants once again point out that

the ratio is not a presently claimed feature in the subject application. As such, the Comparative Examples of the subject application, as well as the Examples of the '628 patent, meet the requirements of Component (A) as presently claimed in the subject application, and thus a comparison can be made therebetween. The dimethylvinylsiloxo terminated dimethylpolysiloxane is present in the Examples of the '682 patent in an amount of 91.6 percent by weight. In the Comparative Examples of the subject application, the dimethylvinylsiloxo terminated dimethylpolysiloxane is present in an amount of 90.6 percent by weight. The organohydrogenpolysiloxane is present in the Examples of the '682 patent in an amount of 28 percent by weight, whereas the organohydrogenpolysiloxane is present in the Comparative Examples in an amount of 18 percent by weight. This difference is insignificant. Though the ratio may have a slight impact with respect to the length of the polymer chain formed from the hydrosilylation reaction, the length of the polymer chain does not have an impact on the desirability of utilizing the organosilicon polymer by itself, i.e., without Component (B) of the present claims, which is precisely why this ratio is an unclaimed feature in the subject application.

Further, the Applicants respectfully point out that in both the Examples of the '682 patent and the Comparative Examples of the subject application, the organohydrogenpolysiloxane contains 0.16% silicon-bonded hydrogen atoms, which is the property of the organohydrogenpolysiloxane that contributes to the cross-link density of the organosilicon polymer. As such, the resulting structure of the organosilicon polymer of the Examples of the '682 patent and the structure of the organosilicon polymer of the

Comparative Examples of the subject application are much more similar than the Examiner has appreciated. Certainly, a difference of merely one percent by weight of the dimethylvinylsiloxyl terminated dimethylpolysiloxane present in the compositions of the Examples of the '682 patent versus that which is present in the Comparative Examples of the subject application cannot be exaggerated such that these compositions cannot be correlated to one another. Each is correlated to Component (B) which, by itself, has undesirable properties, as illustrated by Comparative Examples 1-3 relative to Practical Examples 1-6 of the subject application. However, a mixture of Component (A) and Component (B) unexpectedly provides desirable properties. The Examiner has not cited any reference that teaches such a combination, or the excellent physical properties obtained thereby.

The Examiner also states that she cannot determine "if the three examples of Component (A) given are sufficient to establish a trend that encompasses all linear organosilicon polymers with a main chain composed of diorganosiloxane units and alkylene units." It is clear that the Examiner has in fact assumed that three Examples do not establish a trend, as this contributes to the basis of her rejection. The Applicants submit that the unexpected results obtained by the combination of Components (A) and (B) are obtained throughout the range of the components utilized to form Component (A). Notably, claim 1 is not a product-by-process claim, and the method by which Component (A) is formed is irrelevant to the scope and/or substance of the claim. As such, the focus of the Examiner should be whether a particular polymer meets the requirements of Component (A), and not on the method of making Component (A) and the ratios of components utilized therein.

The Examiner is respectfully reminded that “[e]vidence of unobvious or unexpected advantageous properties, such as superiority in a property the claimed compound shares with the prior art, can rebut prima facie obviousness.” MPEP § 716.02(a). Further, “[e]vidence that a compound is unexpectedly superior in one of a spectrum of common properties . . . can be enough to rebut a prima facie case of obviousness.” *In re Chupp*, 816 F.2d 643, 646, 2 USPQ2d 1437, 1439 (Fed. Cir. 1987). Finally, as possibly most importantly, the Applicants respectfully point out that “[n]o set number of examples of superiority is required.” (emphasis added) MPEP § 716.02(a).

Once again, because the Applicants are not claiming a ratio of components to form Component (A), the Applicants do not believe additional Examples exemplifying the undesirability of different linear organosilicon polymers which fall within the scope of Component (A) to further bolster the unexpected results obtained by the combination of Components (A) and (B) are necessary. By way of example, suppose a hypothetical claim is directed toward a composition comprising (1) a polysiloxane having a particular reactive group and (2) a polysiloxane-reactive component wherein unexpected results are obtained by such a combination. Certainly the Applicant in this instance would not be required to show examples of every possible polysiloxane-reactive component that may be encompassed by such a claim to establish unexpected results obtained by the combination. Moreover, Component (A) of the present claims is directed to an organosilicon polymer, which, unlike the term polysiloxane-reactive component, is not an all encompassing term.

With respect to Component (B), the Examiner contends that the Examples discussed in regards to the unexpected results make use of one such oil, and that it is difficult to establish a trend that supports unexpected results for all such oils that meet this limitation. Notably, the Applicants have amended claim 1 to further clarify that Component (B) comprises a non-crosslinkable silicone oil or an organic oil. In addition, the Applicants respectfully submit that the Examiner has not fully analyzed Practical Examples 1-6, which show several types of oil providing the unexpected results of the combination of claimed Components (A) and (B).

As previously established, Comparative Examples 1-3 of the subject application form an organosilicon polymer meeting Component (A) of the present claims without Component (B). As shown in Table 1, these organosilicon polymers alone had undesirable dispersibility in water. In addition, as shown in Table 2, these organosilicon polymers alone had poor smoothness on skin, sensation of tackiness on skin, coefficient of adhesion to hair, sensation of moistness on hair, and sensation of smoothness on hair when incorporated in cosmetic compositions. Further, as set forth in Table 5, these organosilicon polymers formed in Comparative Examples 1-3 had undesirable amounts of silicone adhered to hair. To appreciate the unexpected results of the combination of claimed Components (A) and (B), the Examiner is respectfully directed to Practical Examples 1-6. In Practical Examples 1, 2, 4 and 6, the oil meeting Component (B) is dimethylpolysiloxane having both ends of the molecular chain blocked with trimethylsiloxy groups. In Practical Example 3, the oil meeting Component (B) is isoparaffin oil. In Practical Example 5, the oil meeting

Component (B) is decamethylcyclopentasiloxane. Notably, Table 1 exemplifies the fact that the combination of Components (A) and (B) in Practical Examples 1-6 resulted in a uniform mixture having excellent dispersibility in water. Table 2 illustrates the excellent coefficient adhesion of hair for Practical Examples 1-4 when formed into cosmetic compositions, which is an improvement of more than 100% over the best coefficient of adhesion to hair obtained from Comparative Examples 1-3, which did not include Component (B). Certainly, an improvement of more than 100% is unexpected from the combination of Components (A) and (B). Other properties, including smoothness of skin, sensation of tackiness on the skin, sensation of moistness of hair, and sensation of smoothness of hair were more desirable than those obtained from Comparative Examples 1-3, as exemplified by Table 2.

Thus, contrary to the Examiner's position, several oils meeting Component (B) are shown to provide unexpected results when combined with Component (A). Specifically, dimethylpolysiloxane having both ends of the molecular chain blocked with trimethylsiloxy groups and decamethylcyclopentasiloxane are each non-crosslinkable silicone oils meeting Component (B) which provide unexpected results in Practical Examples 1, 2 and 4-6 relative to Comparative Examples 1-3. In addition, isoparaffin oil is an organic oil meeting Component (B), which also provides unexpected results in Practical Example 3 relative to Comparative Examples 1-3. In view of the fact three different oils are shown to provide unexpected results, contrary to the Examiner's position that the subject application only focused on a single type of oil as Component (B), the Examiner's rejections are respectfully traversed.

In view of the foregoing, the Applicants respectfully submit that independent claim 1, as well as claims 3-5 and 12-15 which depend therefrom, and independent claim 8, as well as claims 9-10 which depend therefrom, are both novel and non-obvious over the prior art including over the '682 patent, Lochhead et al., and the '310 patent, either individual or in combination. As such, the Applicants submit that the claims are in condition for allowance and respectfully request such allowance.

The Applicants also submit that independent claims 6 and 7, as well as claims 16-19, which depend from either independent claim 6 or 7, respectively, are novel and non-obvious over the prior art including over the '682 patent, Lochhead et al., and the '310 patent, either individual or in combination. Further, because Claims 6 and 7, which were previously withdrawn by the Examiner, have been amended to incorporate all of the claim limitations of presently amended claim 1, the Applicants respectfully request rejoinder of these claims.

While it is believed that no additional fees are presently due, the Commissioner is authorized to charge the Deposit Account No. 08-2789, in the name of Howard & Howard Attorneys PLLC for any fees or credit the account for any overpayment.

Respectfully submitted,

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